Crystal Stability for the Drake 4B

TRUMAN BOEKOEL, K8JUG
2666 Edwin Dr.
Xenia, OH. 45385

Drake has made provisions in their R4B receiver to switch from the VFO to crystal control. They have even included a trimmer to zero the crystal to the desired frequency. This arrangement works fine for SSB and CW nets, but leaves a lot to be desired in attempting to zero and hold the frequency for a RTTY auto-start net.

Electrical/mechanical instability may be traced to the compression trimmer, and that the crystal is on the outside of the cabinet. This external arrangement of the crystal invites thermal instability.

Remove the crystal socket and the compression trimmer capacitor from the R4B cabinet. Mount a JFD 1.5-7 pf glass piston trimmer in the hole left by the removal of the crystal socket. Use insulating hardware. Connect the glass piston trimmer to the same terminals that were used by the old compression trimmer. Reinstall the crystal socket inside the cabinet, on the chassis. Your crystal will now be installed inside of the cabinet. In effect you are now using the entire R4B as a crystal oven.

This is an easy modification that will result in a very stable crystal circuit and a smooth vernier tuning for your R4B receiver.

Consult your R4B manual for the correct procedures for selection of the crystals.

Have the week after New Years off? Take in the Saroc Hamvention in Las Vegas Jan. 3-5th. You might? win enuf to bring home that dream set that will be on display. See the ad in the issue for details.

Many still talk about 40 meter RTTY operation but the band still sounds dead. 7040 seems to still be the most popular, so some night get on and call a CQ. Chances are everybody is listening so YOU give them something to listen to.

*** ***

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RTTY JOURNAL

November 1974

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VOLUME 22 No. 9

30 Cents

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VOLTA RTTY DX CONTEST--

RULES

VOLTA CONTEST

TEST PERIOD: 14:00 GMT December 7th to 20.00 GMT December 8th, 1974.

BANDS: All Amateur Bands 3.5; 7; 14; 21 and 28 MHz.

EXCHANGE POINTS: All two-way RTTY contracts between stations of the same Country will count zero points. All two way RTTY contacts with stations in own Zone will count for two points. All two way RTTY contacts with stations outside one's own Zone will count for points in accordance with the Exchange Points Table. The two-way RTTY contacts made on 28 MHz are performed.

4) **CONTACTS:** Stations may not be worked more than once on any one Band.
Additional contacts may be made with the same station if a different Band is used.
5) **MULTIPLIERS:** A multiplier of one is given for each Country contacted. The same Country may be claimed for extra multipliers if a different Band is used. The operators own Country does not qualify for a multiplier and count zero point.
6) **SCORING:** Total exchange points times the total number of multipliers times the total number of QSO.
7) **COUNTRY STATUS:** A.R.R.L. Country List except that the W Call areas from W0 to W9 and the VE Call areas from VO to VE7 will be considered as separate Countries.
8) **MESSAGES:** Stations will exchange messages consisting of Call sign, RST and Zone number. Example: I3 AAA 599-15.
9) **LOGS AND SCORE SHEETS:** Use one log per Band. Log forms, score sheets and Exchange points tables are available free of charge from SSB & RTTY Club, P.O. Box 144, 22100 Como, Italy. These logs sheets are not obligatory. Logs should contain (in order) Band, Date, Time GMT, Call sign of station worked, messages, numbers sent and received (RST and Zone), Country multiplier and exchange points.
Any log not submitted in accordance with the Contest Rules or with incomplete or erroneous entries or without a completed score sheet will render the entry invalid for any competitive listings or Awards. All entries become the property of the SSB & RTTY Club of Como and cannot be returned.
10) **SWL ENTRIES:** This Contest is open to SWL RTTYers. The same rules apply as are used for transmitting stations and a separate results table will be made for these entries. Logs must contain: Band, Date, Time GMT, Call sign of station heard, RST and number sent by that station and the exchange point. The same station is only valid once on each Band.
11) **DEADLINE:** Logs and Score sheets should be sent to:

A.V. RTTY CONTEST MANAGER
Dr. Franco Fanti
Via A. Dallolio 19
40139 Bologna, Italy

Entries must be received not later than 15th January 1974 to qualify.

DISQUALIFICATION: Failure to comply with the Rules of the Contest will constitute grounds for disqualification. In all questions of dispute, the decision of the Committee of the SSB & RTTY Club of Como shall be final.

13) **AWARDS:** Silver Plaque "Antonio Pessina il LCJ Memorial" to the winner. Certificates will be awarded to: 1) The top scorer in each Country, W/K and VE/VO Call district. 2) The two top scoring SWL entries.
14) **WORLD RTTY CHAMPIONSHIP:** Points and positions achieved in this Contest will be valid for inclusion in the "World Championship" for 1973.

*****

Cover Pix. -

PICTURE DESIGNED by;

DONALD ROYER, WA6PIR
16387 Mandalay Dr.
ENCINO, CA. 91316

The cover picture is a copy of a painting by Rembrandt who painted it in 1630 and is entitled "Danae". The original hangs in the Hermitage Museum in Leningrad. The teletype art took me some 250 hours to complete, using 14 rolls of tape! The finished picture is in four panels and, when put together, the completed print is 25" X 28" and includes some 133,000 characters on the machine, with a tape running time at 60 wpm of a little over six hours. Most of the lines are double overprinted. The painting apparently represented Rembrandt's impression of an aspect of Greek mythology. Danae was the mother of Perseus, and Zeus descended upon her while in prison (and if this is prison, where do I sign up?) in a shower of gold. The bed is a poster type with the foot in the lower left, the cherub in the upper right and slippers in the center foreground, as well as other parts of the painting being gold. The old man (or possibly woman) looking in through the doorway is holding the drapes with one arm and has keys suspended from the other.

Don't let this picture by Don WA6PIR scare out any entries in the contest. Surely many hams can make some kind of a picture if only Mickey Mouse, and who knows you might win a plaque or a prize. There is still time left in the contest (see Sept. Journal) and anyone that can handle some of these new 16 pin solid state devices can certainly make up some kind of an entry for the contest. Try it -- you'll like it...

***

3 Band Xtal Controlled Receiver - Transmitter for $100.

Part 2

TRUMAN BOERKOEL, K8JUG
2666 Edwin Drive
Xenia, OH. 45385

In PART I of my article that was published in the July 1974 RTTY Journal, I covered the "NO HOLES" modification of the Heath Kit HW-16 transceiver. It is assumed that these modifications will have been made before continuing with the following modifications.

Converting the receiver and transmitter to 20 meters
Mechanical stability
Receiver AVC
Internal mounting of the XT-4
Front panel receiver vernier tuning

Converting the receiver section of the HW-16 from 15 to 20 meters. Remove the 26,545.000 kHz 15 meter HF oscillator crystal. Replace it with a 19,545.000 kHz crystal. Install a 10 pf mica capacitor across L4. With the aid of a grid dip meter, tune L4 to 19,545.000 kHz. Remove L1, unwrap the old windings and rewind the coil form with 12 turns of number 22 enamel wire. reinstall L1. With the aid of a grid dip meter, tune the coil to 14 MHz. Install the appropriate desired receive frequency crystal from point "X" on the receiver P.C. board, to ground. Refer to Part I in the July 1974 RTTY Journal for the procedure required to calculate this crystal frequency, also refer to the "Popular Net Frequencies" chart to be sure that you are in the right ball park.

Converting the transmitter section of the HW-16 from 15 to 20 meters. Install a 20 pf mica capacitor across L9. With the aid of a grid dip meter, tap on L16 (final tank coil) 3 turns up. The transmitter doubles to 14 MHz and 7 MHz crystals are used in the XT-4 for operation on that band.

You may desire to stop at this point; however, some instability is inherent on 20 meters. This condition is both mechanical and electrical.

Most of the mechanical instability is the result of the light hook-up wires connected to the band switch. I would suggest that this wiring be replaced with a heavier bus bar.

Electrical instability is primarily due to the unregulated voltages at the receiver oscillator stages. Install a VR150 voltage regulator tube and socket in the front outer corner of the HW-16 receiver section. The center of the VR150 tube socket should be 1" from the right hand edge of the chassis and as close to the HW-16 receiver P.C. board as possible. This will allow adequate room to install the XT-4 piston trimmers on the front panel. Solder a one lug terminal strip on the circuit board foil on the ground bus near point "P". Connect a wire from this lug on the terminal strip to pin 5 of the VR150. Remove R31 from L6 to point "P" on the circuit board. Connect a 5600 ohms 1/2 watt resistor from L6 to the terminal strip. Connect a 4500 ohm 10 watt resistor from the terminal strip to point "P" on the circuit board.

Receiver AVC may be added by using a CK1121 Raytheon Raysistor. The socket which is supplied with the CK1121 may be mounted in any convenient place on the back apron of the HW-16. Hold the socket with the pins up and the two close-spaced pins away from you. Number these two close-spaced pins, 2 & 3, the left hand lower pin number 1 and the lower right hand pin number 4. Pins 2 & 3 are grounded. Pin 1 is connected to pin 2 of V6A on the HW-16 receiver P.C. board. Connect pin 4 of the Raysistor to pin 1 of the phone jack from the audio output of transformer T4. Remove R70 (10 ohms) from the audio output transformer T4.

Internal mounting of the XT-4. As described in the July 1974 RTTY Journal, the XT-4 may be built either on a small P.C. board, or hand wired. In either case, the most convenient spot to mount the XT-4 is at the present location of the receiver VFO capacitor (C53).

If you are using the P.C. board, remove the receiver VFO tuning capacitor and either move or remove the adjacent dial light and associated parts. Using 1/2" metal spacers, mount the P.C. board to the metal chassis above the vacated area of the VFO capacitor. Remove the two JFD glass piston trimmers from the P.C. board and, using insulated hardware for the one trimmer that is above ground, mount the two trimmers on the front panel of the HW-16. This will permit easy access for the fine adjustment of both mark and space frequencies of the XT-4.

Using the hand-wired mounting for the XT-4, remove the receiver VFO capacitor. Mount a tube socket for the 6EA8 tube and associated terminal strips needed. Mount the JFD trimmer capacitors on the front panel of the HW-16 in the same manner as used in the P.C. board mounting. The only difference is that the trimmers will be mounted below the main chassis of the HW-16.

Obtain your plus-150 volts from the now regulated plus-150 volts from the VR150 voltage source. The RF output is connected to pin 2 of V7 on the HW-16 receiver P.C. board. Mount an RCA phone jack on the back apron of the HW-16 to bring in the FSK keyer voltages to the XT-4. Grid bias cut off voltage for the XT-4 may be picked up at point "Y" on the HW-16 receiver P.C. board. 6.3 VAC may be picked up on pin 3 of V4 on the HW-16 receiver P.C. board.

Now that you can tune the XT-4 from the front panel of the HW-16, mount another 1.5-7 pf JFD piston trimmer next to the two already mounted on the front panel of the HW-16. Connect this trimmer to point "X" on the HW-16 receiver P.C. board. You now have a small vernier padder across the VFO replacement crystal, which will allow you to zero the crystal to the desired frequency and will also allow you to peak the coils of the receiver in accordance with the Heath Kit manual.

Bibliography
HW-16 Conversion
Boerkoel
RTTY Journal Dec. 1967
XT-4 Crystal oscillator
Hoff
RTTY Journal Dec. 1967
HW-16 20 meter conversion
Headley
RTTY Journal June 1968

*****

Getting Ready for Teletype

JOSEPH RUSSO, AA9TCU
P.O. Box 146
GODFREY, IL., 62035

The machine arrived, REA prepaid, packed for jungle drop. I went to the ham radio store and bought some books. They turned out to be full of miscellaneous historical information about polar relays and neon bulbs. I learned later that in spite of snappy titles the books were obsolete the day they were printed.

But even earlier I learned that I had a real basic problem. My teletype machine would not print its own keyboard. A borrowed manual was no help. I asked my ham friends in St. Louis; one of them directed me to a repair man, who discovered that a screw holding the selector magnet assembly in place had dropped out. Nothing in the manual about that.

There were other confusions. Fact is, nothing seemed to go ahead in a straight-forward manner. For example, a dealer in New Jersey advertised paper, 12 rolls to the case, for $12.50. I wrote him a note: how much to add for shipping? The answer came back: $4.00. So I sent a check for $16.50. Months later the paper arrived, $15 cartage collect. After a few letters I got my $4 back. (I have since received a good supply of paper from Houston.)

Now to put the machine on the air. I believe that the best discussion of radio teletype is in the ARRL Handbook for 1973 (I have not seen the 1974 issue yet). The terminal unit described in the article is the ST-3, designed by Irving Hoff. My friends in St. Louis told me this was the way to go; one of them provided me with an etched circuit board. However, I discovered that components had to be shopped for, and some were out of stock but you could substitute maybe. The Handbook lists a source in Grand Rapids, so I ordered from there. A month passed, nothing happened. I stopped the check and ordered an ST-5 and an AK-1 kit from HAL in Urbana. They ship promptly.

One reason for giving up on the ST-3 was that I had learned that it was no longer the last word. The latest development is the ST-6. With the ST-5 and the AK-1 I have the basic components of the ST-6 without autostart and other refinements. Autostart may be added later.

The HAL merchandise is excellent, but as for directions you are pretty much on your own. HAL appears to assume that anyone who saw the article about the ST-5 in Ham Radio for September, 1970 doesn't need a manual. However, they are cheerful and helpful with advice.

A good feature of the HAL kit is that you tune the resonant circuits by adding padder condensers rather than by unwinding turns from the toroids. However, these little goodies don't come with the kit, presumably because any self-respecting amateur keeps them in stock.

If you plan to confine your TTY activities to amateur low band and MARS frequencies, the ST-5 is all you need, plus a saturated diode keying circuit in parallel with your VFO tube. However, if you work 2-meter FM you will need the audio frequency keyer AK-1 to generate audio tones to be piped into the microphone jack. You can also plug this unit into the microphone jack of your low band gear, provided it's well enough engineered to radiate on just one frequency. This means Collins gear or better, I am told.

The saturated diode shifter has been around for a long time: the circuit may be found in the Handbook as well as other standard sources. When keyed by voltage from the frequency shift keyer (such as the ST-5) it adds a small amount of capacity in parallel with the cathode of the VFO tube and reduces the frequency by the desired shift, usually 850 Hz.

This is fine for VFO control but not for crystal control because the tube associated with the crystal has too much capacity. I fussed about this for some months, until one of the St. Louis brothers sent me a photocopy of an article by Irv Hoff in the RTTY Journal of December, 1967. Here is contained a lucid discussion of the problem plus a description of the circuit he calls the XT-4. This is contained in a small chassis and plugs into the VFO socket socket of the Viking II.

Another course of perplexity was the setting of the loop current, which comes out of the terminal unit and energizes the selector magnets of the TTY machine. Sixty mils is preferred, but the machine will work on the alternate setting of 20 mils. My machine could not seem to make 60 with the adjusting rheostat full out, so I left it at 20. However, I received complaints of a hiss on 2-meter FM. I could hear it myself on my good old reliable Gonset Communicator II. Instinct drove me to a study of the schematic. I noticed that choice of binding posts determined whether I had an optional 1000 ohm resistor in the circuit or not. It was in. I took it out. I had no more trouble setting the current at 60 mils. No more hiss.

One thing HAL's instructions didn't tell me (no instructions) was not to tie the CW identifier lines from the ST-5 and the AK-1 together. If you do, the output of the ST-5 becomes sluggish and no one will copy you. You could use a two-circuit key jack with some sort of switch on the key, but I believe it's easier to keep track of what you are doing if you have separate jacks.

To review basics: you can send and receive on the low bands with the ST-5 only. It detects your incoming signal and keys your outgoing signal. You will need a shifting circuit in your VFO, unless you are crystal controlled. In that case, you will need something like the XT-4 shifter.

For 2-meter work you will need the AK-1, which can also be used on the low bands with a good SSB transmitter.

If you are using modern SSB-CW gear in teletype service, it is imperative to extract hot air from the final cage with a muffin fan or similar device. Heat should be no problem with old AM rigs, because they were built for key-down service.

I recall a broadcast in which Chief MARS said that more TTY gear was out than had been put to use. One reason is that there is no good single source of information. I know that there are many different kinds of gear, and many ways of applying it. What complicates matters still more is the rapid change in the technology. With increasing interest, we may be able to one day find some good text materials. I hope that my comments will help someone get started. I welcome comments, corrections or questions.

***

RTTY and Oscar 7.

JOE KASSER,G3ZCZ/3
11532 Stewart Ln. C1
SILVER SPRING,MD. 20904

AMSAT-OSCAR 7 due to be launched on 29 October, 1974 is the first spacecraft able to transmit RTTY directly from outer space. AMSAT-OSCAR 7 will transmit 60 channels of telemetry at 60 wpm using 850HZ shift. These transmissions will be fsk on 435-1 MHz and afsk on 145.957 MHz and 29.502 MHz QSL cards are available to acknowledge all reception reports.

Telemetry readings are required to determine the status of the spacecraft immediately following the launch prior to activating the transponders. Can you receive the 435.1 MHz Telemetry and send in a report?

AMSAT nets will be active at 0100Z on 3.850 MHz and at 1800Z on 14,280 MHz starting four days prior to launch and continuing on a daily basis until several days after launch to provide launch news, orbital data and to pass telemetry information. For further details about AMSAT-OSCAR 7 see:

(1) OSCAR 7 and its capabilities, by J. Kasser G3ZCZ/W3 and J. King W3GEY, QST FEB, 1974.

Please send all reception reports to AMSAT. P.O. Box 27, Washington, D.C.

"Cheap and Dirty" conversion for Military 28 machines

W.H.(Bill) CRAIG,WB4FPK
PO Box 947
GRAYSON,KY. 41143

Many military model 28's are showing up in amateur hands through various sources. Unfortunately, many of these machines (Mark III) are geared for the Navy 107 W.P.M. speed (75 Baud) and cannot be put on the "normal" (60, 75, or 100 W.P.M.) speeds by a simple change of the motor gear set, as would be the case if it had been originally geared for one of the "normal" speeds. The reason for this is that a different intermediate gear ("C" in Fig. 1) and mainshaft driven gear ("D") are used on these typing units. To make matters more confusing, the Teletype Corp. parts book identifies these two different intermediate gears ("C") as #163440 - "7.0 and 7.5 unit code", and #163440 - "7.42 unit code". This is extremely misleading, as the "7.0/7.5 unit code" gear is used only with three different speeds! (66 W.P.M. (50 baud) 7.5 unit; Navy 71 W.P.M. (50 baud) 7.0 unit; and Navy 107 W.P.M. (75 baud) 7.0 unit code.) First we will discuss the "normal" conversion method, and then "Craigs Special".

Table I lists the gear numbers that should be installed for the various indicated speeds. To convert the Navy machines requires that the mainshaft in the typing unit be removed from the machine and gear "D" be changed. You can of course replace gear "E", Gear "F", and Cam "G" if you wish at the same time, but it's not necessary and would be quite costly. The transmitting speed will be correct, but still 7.0 unit code rather than 7.42, or 7.5. If you type slower than the keyboard capability no one will know the difference anyway! As you can imagine, this could turn into quite a formidable job! Plan on spending a couple of hours if you've not done this before. You will require the parts book and the adjustment manual to do this job properly, unless you happen to be a Teletype repairman.

Now - you say you don't want to get this involved in the "innards" of the machine? Well, if all you are interested in is normal 60 W.P.M. amateur operation or European 66 W.P.M. (50 baud) speeds for that rare DX, then here's the "cheap and dirty" conversion:

TABLE 1

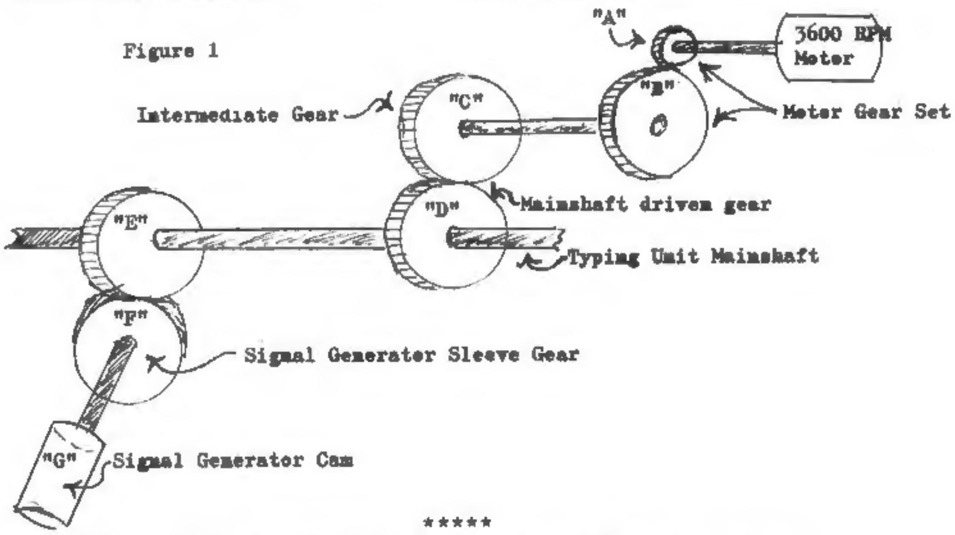
WPM	Code Units	O.P.M.	Baud Rate	Receiving Shaft RPM	Gear Set (A+B)	Gear A	Gear B	Gear C	Gear D	Gear E	Gear F	Cam G	Notes
60	7.42	368	45.45	420	161293	159278 (14T)	159279 (90T)	163440 (48T)	163590 (60T)	150441 (21T)	154032 (24T)	154154	U.S. Commercial Speed
65	7.00	390	45.45	420	161293	159278 (14T)	159279 (96T)	163440 (48T)	163590 (60T)	163503 (26T)	163519 (28T)	163368	Former Western Union Speed
67	7.42	404	50.0	462.2	152766	152765 (13T)	152764 (81T)	163440 (48T)	163590 (60T)	150441 (21T)	154032 (24T)	154154	U.S. Commercial and inter-operation w/european Speed
66	7.50	400	50.0	461.5	163504	163461 (18T)	163462 (117T)	163460 (55T)	163459 (66T)	178764 (26T)	178787 (30T)	178795	European standard Speed
71	7.00	428	50.0	461.5	163504	163461 (18T)	163462 (117T)	163460 (55T)	163459 (66T)	163503 (26T)	163519 (28T)	163368	U.S. Navy Speed
75	7.42	460	56.88	526.5	161294	159281 (17T)	159282 (93T)	163440 (48T)	163590 (60T)	150441 (21T)	154032 (24T)	154154	U.S. Commercial Speed
100	7.42	600	74.2	685.7	161295	159284 (20T)	159285 (84T)	163440 (48T)	163590 (60T)	150441 (21T)	154032 (24T)	154154	U.S. Commercial Speed
107	7.00	643	75.0	692.3	163505	163463 (24T)	163464 (104T)	163460 (55T)	163459 (66T)	163503 (26T)	163519 (28T)	163368	U.S. Navy Speed

To obtain 60 W.P.M. operation, install #163440 (48 tooth) intermediate gear (called the "7.42 unit code" gear) in place of the original intermediate gear, and install a 66 (or71) W.P.M. motor gear set #163504 (composed of #163461 18 tooth pinion and #163462 117 tooth gear). this combination will yield a typing unit mainshaft speed of 420.2 R.P.M. (420 r.p.m. is "ideal" for 60 speed). The keyboard speed will also be correct (45.45 baud), but of course will still be 7.0 unit code.

For 50 baud operation, reinstall the original intermediate gear #163460 55 tooth in place of the #163440 gear. The shaft speed is now correct for 50 baud, again with a 7.0 unit code (71 W.P.M.) and is compatible with any 50 baud machines which of course include so called 66 and 67 speeds.

Naturally, if any other speed is desired, (75 or 100), it will be necessary to change the mainshaft gear (s) as described earlier.

Figure 1



*****

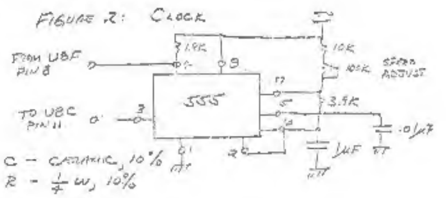
Modified CW Message Generator

ELLIOT LAWRENCE, WA6TLA
5435 Columbus Ave.
VAN NUYS, CA. 91401

The article by K4FUP and W4VWS (1) was about what I wanted for my RTTY station. The authors mention circuit simplifications that apply to a CW only message generator. However, such simple changes are not so obvious to many individuals.

Figures 1 and 2 show the results of the circuit simplifications and changes. Only three 7496 shift registers are needed to send the call eliminating the extra advance and clear inverter outputs. It appears that the connection to ground pin 7 of U6, the 74151, was omitted from the original schematic. This enables the strobe line for the data selector which otherwise holds the output at pin6 high. With out this connection the circuit is inoperative.

Other changes incorporated into the design were replacing the discreet component clock circuit with a 555 timer integrated circuit and the addition of a LED to indicate message cycle operation. The 555 timer has a built-in reset capability which is perfect for this application. The LED indicator is an optional feature.



The reader is referred to the original article for details of the diode matrix.

power supply and unit construction.

(1) Bell and Schmidt, "A TTL Message Generator for RTTY and CW", QST, November, 1973, p. 23.

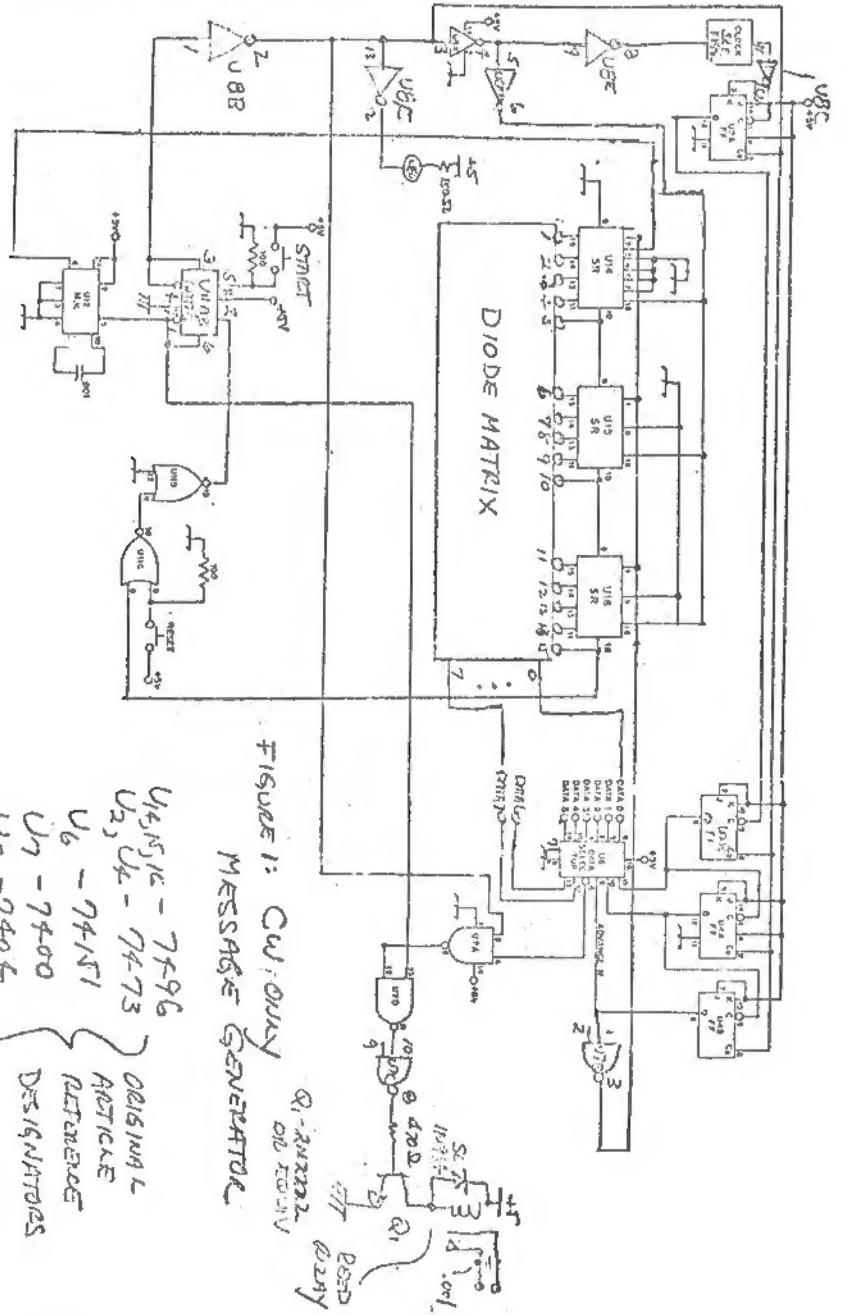


FIGURE 1: CW ONLY MESSAGE GENERATOR

Q1 - 2N2222 OR EQUIV

U4,15,16 - 7496
U2,U4 - 7473
U6 - 74151
U7 - 7400
U8 - 7404
U11 - 7402
U12 - 74121

ORIGINAL ARTICLE REFERENCE DESIGNATORS

*****

An Expanded Memory IDer.

ROGER KISSEL, WB8GIW
1446 Sunset
FAIRBORN, OH. 45324

In the recent past, a number of digital C.W. I D'ers have been designed to enhance the RTTY station. Some of them are programmed with diodes, some by soldering irons, some without the use of diodes at all. Most of them are relatively difficult to program and more so to reprogram, if not impossible without changing IC's. In February, 1973, K20AW designed an identifier that was economical to build and easy to program and reprogram with diodes. It looked like this was the ultimate in generators. But, alas, a problem crops up, and K20AW admits it in his text: Your call may not fit in his 32 character memory. The solution offered here is an expanded memory to fit your needs -- up to 64 characters.

This identifier is basically the same as K20AW but is tailored to suit your needs by means of a jumper which terminates the program at 32, 48, or 64 characters. Further information is offered in February, 1973 issue of "73" **Magazine**. Though the I D'er is more complex, the theory of operation is the same as the one described in "73" **Magazine**.

Technical Aspects

The circuit operates on 5 VDC @ 300 mA, and draws current at all times. A LM309K is an ideal power supply regulator for this circuit.

An audio sidetone is available and is sufficient to drive a small speaker directly. The square wave output is not suitable for driving a SSB transmitter since it will not produce a clean signal.

Speed of the output is controlled by the 5 uf capacitor and 220 ohm resistor in the clock generator.

A keying signal (open collector) is available at the collector of Q1. This can be used to drive a relay or another keying circuit.

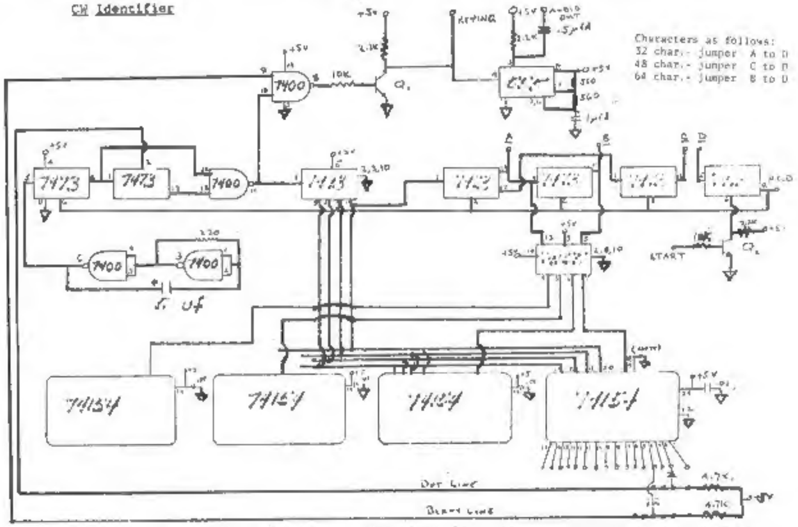
A 3 Vdc "hold" voltage is available at pin 8 of one of the 7473's during the ident. This can key a relay as outlined above (to hold a RTTY transmitter or repeater on the air).

The I D'er is started by applying plus5V to the isolated base of Q2.

Instability caused by the presence of RF may be eliminated by collecting a 100 uf 10 Vdc electrolytic capacitor from the plus Vdc line to ground.

The identifier is available as a parts package including a drilled plated plug-in circuit board - all IC's, diodes, resistors and capacitors from Mr. Roger Kissel, WB8G1W, 1446 Sunset, Fairborn, Ohio 45324. The package costs $39.95. (Add $3.00 for I.C. sockets.)

CW Identifier



Characters as follows:
32 char.- jumper A to D
48 char.- jumper C to D
64 char.- jumper B to D

Notes: All 74154's wired similarly. Either pin 18 or 19 may be grounded; the other is routed to the 7493. Both xistors any NPN silicon. All resistors ¼ or ½ watt. Programming diodes should be any germanium type.

*****

LIST OF COMMERCIAL FREQUENCIES

We are happy to print another couple of lists of Commercial stations. Since frequencies, hz shift and baud seem to change without notice it is hard to keep up to date but the list in this issue should be of some help. We know from the requests we get that copying these stations is very popular among not only hams but SWLs.

From- DALE OTT, 7 Ragsdale, Agana, Guam, % FPO San Fran. 96630

FREQ.	CALLSIGN	SERVICE	LOCATION
3235	WBR70	WX	MAIMI
3355	WWF33	--	MORROCO
3766	-----	WX	ENGLAND
4013	-----	WX	FRANCE
4061	WBR70	WX	MAIMI
4443	-----	WX	-----
4488	-----	WX	ENGLAND
4583	-----	WX	-------
4598	-----	WX	-------
4610	-----	WX	ENGLAND
4613	-----	WX	-------
4623	SOE26	PAP	-------
4813	-----	WX	-------
4820	-----	WX	-------
4962	SOE69	PAP	-------
4977	SOE79	PAP	-------
5040	WWF25	---	MORROCO
5224	HMN56	KCNA	N.KOREA
5240	40C2	----	TANJUG
5260	----	AP	-------
5302	----	UPI	-------
5328	----	WX	-------
5336	----	WX	-------
5354	----	REUTER	BIERUT
5390	6MK30	HAPDONG	SOUEL
5393	SOF33	PAP	-------
5450	40D	-----	-------
5741	SOF27	PAP	-------
5790	-----	UPI	-------
5842	FTF84	AFP	FRANCE
5875	-----	UPI	HONGKON
5903	SOF29	PAP	-------
5907	ISY59	ANSA	ITALY
5935	GPA25	REUTERS	-----
5940	WSY70	WX	N.Y.
6767	OLK4	CETEKA	PRAGUE
6845	----	ANSA	-------
6875	WWG36	----	MORROCO
6888	SOG48	PAP	-------
6890	WWF56	---	-------
6910	BXP29	REUTERS	SPAIN
6915	RGE65	HSINHUA	CHINA
6935	WFA36	AP	NY
6971	-----	-----	GENEVA
7015	HMF21	KCNA	N.KOREA
7036	OAA27	AFP	PERU
7150	WFJ27	REUTERS	-------
7260	WFI97	UPI	NY
7327	JAE27	AP	JAPAN
7328	OLW4	CETEKA	PRAGUE
7329	----	UPI	------
7330	3MA32	---	------
7465	CLN66	P.L.	CUBA
7512	-----	UPI	----
7530	RZA24	TASS	USSR
7544	ZEN33	CNA	HONGKON
7561	BAB94	-----	-----
7562	RPT30	TASS	USSR
7577	-----	CETEKA	PRAGUE
7580	ZAA	------	TIRANA
7580	SUA250	MENA	-----
7628	WFI97	UPI	-----
7658	YZD	TANJUG	-----
7680	PAC27	TASS	USSR
7693	WWC67	----	----
7695	3MA35	CNA	FORMOSA
7698	-----	----	----
7728	WWF77	----	----
7760	WFA67	708	NY
7784	GPA2	---	G.PHONG
7806	YZD7	---	TANJUG
7822	----	UP1	------
7858	WFI57	UPI	NY
7863	SOH48B	PAP	------
7868	6MK50	-0$9,$	SEOUL
7910	-----	ANSA	------
7924	GNU27	----	------
7940	AKI5	AKI	CAMBODI
7975	CVK69	DPA	URUGUAY
7980	-----	AFP	PARIS
8000	ISY80	ANSA	ITALY
8001	SO120	----	-----
8017	CLN212	----	-----
8022	-----	AFP	PARIS
8062	RRQ23	TASS	USSR
8066	BZT38	HSINHU	CHINA
8067	DMV7/5	ADN	----
8174	JAE58	(6959	JAPAN
9045	CLN240	P.L.	CUBA
9077	-----	UPI	----
9132	VNA26	VNA	HANOI
9135	WNA69	ANSA	------
9143	9MY58	WX	SING.
9201	------	-----	------
9208	WFD39	UPI	------
9328	WFI29	UPI	------
9353	OLK5	CETKA	PRAGUE
9375	3MA25	CNA	FORMOSA
9430	-----	ATA	TIRANIA
9440	HMF	KCNA	N.KOREA
9750	HMF17	KCNA	N.KOREA
9895	ZEN45	UPI	HONGKON
9953	YZF	----	TANJUG
9985	FTK94A	AFP	PARIS
10153	SOK2(	PAP	-----
10187	WWF73	---	MORROCC
10277	-----	UPI	-------
10234	3MA53	CETKA	PRAGUE
10256	-----	-----	TANJUG
10258	RDZ71	TASS	USSR
10278	YZA9	----	TANJUG
10320	GPA2	----	GAI PHC
10362	DZG30	UPI	MANILA
10435	ZAY	----	5848,-
10543	DMV54	ADN	------
10550	FTH43	AFP	PARIS
10562	DZP26	AP	MANILA
10559	FTH43	AFP	PARIS
10580	HMK25	(1,-	N.KOREA
10582	FTK5A	AFP	PARIS
10592	WFL30	UPI	NY
10596	5&419	RCA	------
10600	VNA25	VNA	HANOI
10647	AUY20	---	-------
10740	WFK60	I.T.	-------
10747	WFK60	----	-------
10749	WFL60	ANSA	NY
10754	WFK80	REUTEI	NY
10785	DKG7	ADN	BERLIN
10795	-----	KYODO	JAPAN
10800	-----	ANSA	------
10805	-----	UPI	------
10825	WFE20	UPI	NY
10865	RZA24	TASS	USSR
10880	ISX88	----	-----
10895	WFE40	AP	-----
10895	SUA23	MENA	-----
10922	DMV22	ADN	-----
10940	FTK94	-10	PARIS
10947	1;,	---	-----
10960	3MA35	---	-----
10980	JAG70	AP	JAPAN
10980	BQQ72	HSINHI	CHINA
11015	-----	AFP	-----
11196	AKI3	AKI	CAMBO.
11457	CVM3	REUTEI	URUGUAY
11420	VNA86	VNA	HANOI
11425	-----	KCNA	N.KOREA
11450	HMN31	KCNA	N.KOREA
11473	YMK51	HAPDON	SEOUL
11490	CVN2	DPA	URUGUAY
11500	VNA89	VNA	HANOI
11600	6MK64	UPI/OP	S.KOREA
11640	DZP28	AP	MANILA
11642	WFL71	708	,6
11644	WFK41	---	-------
11680	-----	HSINHU	CHINA
11835	-----	REUTER	BEIRUT
12230	-----	N.KOREA	KCNA
12257	DMV32	------	ADN
12258	-----	------	TELEX
12300	HMS48	N.KOREA	KCNA
12719	ZLS2	-------	UNF
13110	----	USSR	TASS
13204	BIL31	-----	----
13410	RIF38	USSR	TASS
13423	FTK94A	PARIS	AFP
13438	DGN43	GERMANY	DPA
13470	WWH53	MORROCC	----
13472	-----	N.Y.	RCA
13480	WER73	,6	708
13480	VNA4	HANOI	VNA
13487	-----	USSR	TASS
13487	-----	------	ANSA
13490	RCG77	USSR	TASS
13490	PLD3	JAKARTA	-8
13512	HMS61	N.KOREA	KCNA
13526	WFM73	-------	MENA
13556	WFD49	-------	JTA
13560	BAK53	CHINA	HSINHUA
13563	EMA22	FORMOSA	CNA
13580	HMS19	N.KOREA	KCNA
13585	GAB33	-------	----
13608	WWH93	MORROCC	----
13615	SON26	-------	PAP
13647	OLI5	PRAGUE	t35(-
13653	SUA50	------	MENA
13708	-----	-----	UPI
13760	RTU43	USSR	TASS
13765	JAM53	OSAKA	----
13770	-----	-----	REUTER
13780	HME28	N.KORE	KCNA
13810	OVF88	SING.	AP
13815	CVM4	ITALY	ANSA
13823	----	-----	TASS
13826	CLN411	CUBA	P.L.
13843	WFK93	NY	ANSA
13868	-----	----	AP
13895	DMV47	BERLIN	-$,
13907	GIB33	------	DPA
13910	GPU33	------	AP
13935	RCG78	USSR	TASS
13937	ISX19	----	JTA
13948	41&78	USSR	TASS
13974	ISX19	ITALY	ANSA
13975	CVN4	URUGUAY	DPA
14290	HMB22	------	-----
14335	CVM5	CHINA	HSINHU
14351	CVM5	URUGUAY	437534
14362	-----	------	REUTER
14440	-----	------	UPI
14462	GPR34A	SWITZ.	------
14481	RNK36	-------	------
14490	RRRF	USSR	TASS
14515	GPR34	LONDON	REUTER
14525	-----	CUBA	P.L.
14547	-----	JAPAN	KYODO
14565	ATA65	-----	-----
14570	HKM60	N.KOREA	KCNA
14584	OLM2	PRAGUE	CETKA
14595	JAL54	JAPAN	AP
14625	DMV25	-----	ADN
14633	WFL54	-----	-----
14638	WFK54	NY	04328
14639	RIC73	------	REUTER
14640	-----	LAOS	KPL
14660	WFL44	------	UPI
14673	-----	------	-----
14690	WFD34	------	DPA
14695	WFD24	N.Y.	AP
14700	9VF96	SING.	REUTER
14710	WFD34	------	-0
14717	-----	JAPAN	KOYODO
14720	RKB58	USSR	TASS
14720	JAN24	JAPAN	DPA/J1.
14725	WFD44	-----	DPA
14743	-----	-----	UPI
14747	AFP2	-----	-10
14780	-----	AFP	-----
14785	FTO79A	AIR	INDIA
14787	ATP65	AIR	INDIA
14790	SUA82	-----	CAIRO
14804	9V97	ANSA	SING.
14810	-----	UPI	-----
14812	DZP30	AP	MANILA
14920	BAP44	HSINHUA	CHINA
14931	-----	AP	-----
14960	RWM75	TASS	USSR
14965	ZEN71	UPI	HONGKON
15472	IRN24	ANSA	ITALY
15480	WFD55	AP	-----
15495	-----	TASS	USSR
15505	OLS2	CETKA	PRAGUE
15508	SOP25	PAP	------
15515	BAK65	HSINHUA	CHINA
15517	PLK45	UPI(?)	NEATH.
15580	RKT3	TASS	USSR
15607	WFK45	708	-----
15613	WFK65	JTA	NY
15637	HMH21	KCNA	N.KORE
15640	21(85	UPI	-------
15650	FTP65	-10	-------
15653	SUA50	MENA	-------
15693	8/56	ANSA	ROME
15696	CLW	P.L.	CUBA
15700	BZG45	HSINHU	CHINA
15706	WFM75	REUTERS	-----
15724	ISX57	ANSA	-----
15744	VNA5	VNA	HANOI
15856	WFL85	---	-----
15865	RBK79	TASS	USSR
15871	RWW70	TASS	USSR
15903	-----	UPI	-----
15908	WEY85	457534	-----
15914	23645	AP	-----
15930	RBI78	TASS	USSR
15935	SUA91	MENA	----
15950	CVN6	ANSA	----
16035	9VF252	----	SING.
16050	RCE54	TASS	USSR
16114	-----	TASS	USSR
16117	-----	P.L.	CUBA
16156	RWM75	TASS	USSR
16185	FP99	AFP	----
16190	RGW26	TASS	USSR
16207	WFD66	AP	----
16224	3MA26	CNA	FORMOSA
15232	4UY26	----	-----
16260	RWN75	TASS	USSR
16352	OLF4	CETKA	PRAGUE
16373	WFD86	708	NY
16384	VNA30	VNA	HANOI
16398	FIQ39	-10	0-48
16440	WBR70	WX	MAIMI
15647	-----	UPI	-----
17210	BZR58	TASS	USSR
17238	-----	TASS	USSR
17435	DGR43	ADN	E.GERM.
17455	HXX23	WX	FRANCE
17489	ATC67	----	INDIA
17570	ROU44	TASS	USSR
18050	JAZ28	AP	JAPAN
18061	BAB90	----	-----
18185	CML	P.L.	CUBA
18256	ZEN86	AP	HONGKON
18256	VNA32	VNA	HANOI
18270	WFK78	437534	NY
18273	WFL28	ANSA	NY
18335	HSO44	-----	BANGKOK
18378	JAY48	-----	9-(-
18385	-----	TASS	USSR
18484	WFK28	UPI	NY
18488	-----	REUTER	LAGOS
18543	WFK48	REUTER	NY
18561	WFL38	-----	NY
18563	WMM78	-----	S.FRAN.
18570	JAW48	AP	JAPAN
18578	CVN8	REUTER	URUGUAY
18666	----	ANSA	------
18684	----	REUTER	------
18765	WBR70	WX	MIAMI
18775	UFFI	TASS	USSR
18777	CLN611	P.L.	CUBA
18885	WER78	708	NY
18985	-----	t35(-	04-&73
19177	OTC(A)	-----	SYDNEY
19362	------	HSINHU	CHINA
19470	WMM29	-----	S.FRAN.
19505	RKV	TASS	USSR
19515	ZE094	UPI	HONGKON
19525	OL04	t35(-	PRAGUE
19538	WFD99	AP	NY
19580	WFD59	708	,6
19620	21$79	AP	NY
19830	RWW76	TASS	USSR
19863	-----	TASS	USSR
19925	4UA	----	----
20085	ISX20	ANSA	-----
20200	-----	ANTERA	INDON.
20245	9VF228	ANSA	SING.
20393	9VF288	REUTER	-----
20760	JAU60	TELEX	JAPAN
20752	9VF230	ANSA	SING.
20755	9VF231	AP	SING.
20787	JAU70	TELEX	JAPAN
20799	WFN60	708	NY
20804	WFN30	---	NY
20915	OCA36	REUTER	PERU
20965	RKB70	TASS	USSR
20980	WFG40	DPA	----
20985	21450	708	NY
21765	CEC4P	---	CHILE
22790	WEU52	708	,6
22885	DMV28	-$,	E.GERM
22890	RKR56	TASS	USSR
22975	WFG42	UPI	NY
23072	WFN55	-,-	---
23130	ATR73	AIR	INDIA
23391	WFN73	REUTER	-----
23928	WG043	AP	NY

* * *

Furnished by- John Draus,W0EKB, 7303 Ames Ave. Omaha, NB., 68134

FREQUENCY	STATION	[illegible]	LNG.
6.9350	WFA36	AP	ENG/SP.
7.5352		AFP	SP.
7.6282	WFI60	UPI	SP.
7.7600	WFA67	UPI	SP.
7.9054	KGE22		SP/ENG
8.0834			SP.
9.3130			SP.
9.3620		P.L.	ENG./SP.
9.3490		AP	ENG.
9.3274		UPI	ENG.
9.985		AFP	SP/IT.
9.9557		PL	SP.
10.7484	WFL60	ANSA	SP/ITAL.
10.5000	KMG22	ANSA	SP.
10.7182		ANSA	SP.
10.8253		UPI	S
10.8900	WFEV0	AP	SP/ENG.
10.9518		PL	ENG/SP.
10.9144	KGE22		ENG/SP.
10.8042			
10.4350		PL	SP.
10.2700		PL	SP
10.2126		AP	ENG
10.9472		PL	SP.
10.9330		PL	SP.
10.649		AP	SP.
10.6905		—	SP.
10.9840		REUTTERS	ENG.
10.5594		—	FR.
11.015		AFP	SP.
12.301		PL	SP
12.126	CLN364	PL	SP.
13.4290	FTK94	AFP	SP./FR.
13.8430	WFK93	ANSA	SP./ITAL.
13.890		PL	SP.
13.6400	WKB43	AL	ENG.
13.800	WFD78	AFP	FR.
13.515		PL	ENG.
13.895		ABN	ENG.
14.695		UPI	SP.
14.710		AP	SP.
14.626	CLN446	PL	SP.
14.773	WEU27	—	ENG
15.994		REUTTERS	ENG
15.6355		REUTTERS	ENG/SP
15.9142		AP	ENG.
16.2484		AFP	SP.
16.1050		UPI	FR/SP.
16.3725		UPI	ENG.
16.1064		—	SP.
17.4525		PL	SP.
17.6892		UPI	SP.
18.2730	WFL28	UPI	SP.
18.776	CLN611	PL	SP.
18.1448		—	SP
18.2724		—	SP.
18.5772		—	SP.
18.759		—	SP.
19.0118		PL	ENG.
19.537		AP	ENG.
19.5800		—	SP.
20.505		AFP	SP.
20.7326		UPI	ENG/SP.

VHF RTTY NEWS

RON GUENTZLER, W8BBB Editor
212 GRANDVIEW Blvd.
Ada, Ohio 45810

We are beginning to wonder whether there really is a need for a VHF RTTY column on a monthly (or regular) basis. We have felt that there was such a need, mainly for the purpose of acting as a medium for letting prospective VHF operators know where to look for the "action". That is, if one person knew where all the action is, then it would merely be necessary for a prospective operator to ask that one person; in analogy, when one wants to know something, all he has to do is ask someone who knows; the big problem is: Who knows?

Personally, we have felt that we were successful in the task of supplying operating information, but never as successful as we would like to have been, and especially not recently. The big bottleneck has been that we can't get people to volunteer information. We have observed that something like 95% of all people won't write letters. However, we thought that those who write as a hobby (via Teletype) would be more inclined to write even short letters (or postcards). We have found though, that this is apparently not true. About 6 years ago when this column was going fairly smoothly with regard to VHF operating information, we wrote "blind" letters to anyone we knew of who might be able to tell us about VFH operations in a particular area - all were active VHF RTTY operators - not one answered! On the other hand, those who wrote to give information would always reply to a query requesting further information.

Anyway, what we are trying to get at is this: For the sake of new operators, we need to know where the VHF RTTY operation is taking place. It doesn't take a formal letter; a postcard will do. We can't help someone get on if we don't know where to tell the new operator to look for activity. Please let us know.

Baudot vs. Murray

At the Dayton Hamvention last APR., John Sheetz, K2AGI, and Bill Baird, W8MBB, mentioned that the so called "Baudot" Code used by amateur RTTY machines isn't the Baudot Code at all, but is actually a minor modification of the Murray Code. They gave the reference: "Principles of Telegraphy (Teletypewriter)", NAVSHIPS 0967-255-0010, 1967 JUN., S.D. Cat. No. D219.8: T23, $1.50. (It turns out that we have had a copy sitting here since the middle of 1968, but never got around to reading it until about a week ago!) The price, if it is still available, might be higher. If anyone knows whether it is currently available and the current price, please let us know about it. It is an excellent reference for all aspects of RTTY operation.

The following is a brief summary of the history of printing telegraphy taken mainly from Parts A and C of NAVSHIPS 0967-255-0010 but also partially from many conversations over the last 20 years. Therefore, please consider the following as reasonably accurate but with no guarantee that it is 100% accurate. If there are any mistakes, please let us know.

Printing telegraphy (Teletype) was an outgrowth of manual telegraphy. After many semi-successful attempts at practical telegraph systems by many European and American inventors, the Morse or Morse-Vail system was patented in 1840; it consisted of a key for transmitting, a register* for receiving, and relays for "relaying" the signal from one circuit to another in order to increase the distance over which the signals could be transmitted. (*Many of the early systems, including the Morse system, received by making marks on a strip of moving paper. The telegraph sounder came later.)

Morse also invented the code used with the system. It resembles the code presently used for radio telegraphy (CW), but his land-line code differs in 11 characters from that used by radio operators. (The Morse code employs three different length dashes and several of the characters are composed completely of dots with two different length spaces between the dots.)

A printing telegraph system (actually printing letters rather than just making marks on a strip of paper) was invented by House in 1846. It used a 29-key keyboard, closely resembling a piano keyboard, for transmitting; the message was received by printing letters on a strip of paper.

In 1856 a printing telegraph system was invented by Hughes. It used tones for transmitting rather than dc impulses. The keyboard contained two rows of keys or buttons somewhat resembling the keys on a typewriter. The Hughes system remained in use until about 1900. (It appears that the Hughes system was a forerunner of the "Harmonic Telegraph" that Bell was working on when he invented the telephone.)

Increase in the use of telegraphy led to the invention of multiplex systems in which several telegraph messages could be sent simultaneously over a single circuit.

In 1874, Baudot invented a multiplex system in which four messages could be sent simultaneously over a single circuit. Each message was sent from a keyboard containing five keys. (The keyboard was arranged in such a way that it appears that it was probably operated using two fingers on the left hand and three on the right hand.) The coding had to be done by the operator; that is, the letter to be sent was "coded" by the operator by simultaneously pressing keys 1, 3, and 5. The message was received automatically and printed on a strip of paper.

The Baudot Code resembles in form the present 5-unit teleprinter 5-unit binary code and because it uses figures and letters shifts. (5 binary units equal 32 characters). A slightly modified form of the original Baudot Code is now known as the CCITT International Telegraph Alphabet No. 1.

There were two drawbacks to the Baudot Code and system. 1) The operator (at the transmitting end) had to know the code in order to operate the 5-key keyboard, and 2) It was not possible to easily make the code automatically transmittable from a typewriter-like keyboard because of the coding of the characters (for example, the letter J and the numeral 6 used the same code combination).

Therefore, about 1901 Murray devised a 5-unit binary code with figure and letter shifts (as Baudot had done), but he used a typewriter-like keyboard with the top row (numerals) moved downward to coincide with the top letters row on a standard typewriter keyboard. (The Murray Code was different from the Baudot Code because of the necessity to have the figures correspond with the upper letters keys on a typewriter; e.g., Y and 6 have the same code). The Murray Code has become the CCITT International Telegraph Alphabet No. 2 (this is the alphabet or code spelled out in the FCC rules for amateur RTTY operation).

Therefore, do amateurs use the Murray Code or the Baudot Code? The format of the code (5 binary units, in time sequence, with most of the code combinations used twice and distinguished by whether preceeded by a figures or letters shift) is the invention of Baudot. However, by law, they use the CCITT International Telegraph Alphabet Number 2, which is the Murray Code.

Perhaps it is best to say they use the Baudot-like, Murray Code. The question as to whether it is better (or proper) to call it Baudot or Murray will eventually become mute because all new commercial installations are using ASCII, and eventually no one will be using the Baudot-like, Murray Code.

Both the Murray and Baudot systems were synchronous multiplex systems and were too complex for individual users; i.e., they were only suitable for high-usage circuits between two points. Therefore, in 1907 Krumm and Krumm brought out the first practical start-stop asychronous system; it used the Murray Code. From then until about 1970, the vast majority of all teleprinters have used the Murray Code in a start-stop Krumm format.

In the following we are vague as to details, especially exact company names and dates. It would be interesting for someone to investigate the history of teleprinter developments from 1907 on and write it up for publication in the RTTY Journal. Sometime not too long after 1907, the Krumm interests merged with Morton and became known as Morkrum. Morkrum then merged with Kleinschmidt as Morkrum-Kleinschmidt. Sometime in the 1920s, American Telephone and Telegraph Campany bought Morkrum-Kleinschmidt and eventually changed the name to Teletype Corp. (Teletype is a registered trademark of Teletype Corp.) The Kleinschmidt interests again came into being as a separate corporation.

73 ES CUL, RG.

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RTTY-DX

JOHN POSSEHL - W3KV
Box 73 Blue Bell, Pa., 19422

Hello there . . .

For this session band activity seemed to be marking time between contests. The CARTG Contest takes place a week after this is being written and as we must adhere to publishing deadlines we will not have a summary until next month.

While there was no advance publicity of any new RTTY DX activity for the contest, there were a few "eye openers" during September that made the old band come to life.

In mid month Alex, 3A2GX, came on with a really fine signal from Monte Carlo and has since been making it a continued week-end affair on the 14 mhz band. Alex says that you can QSL direct or via his home call, I1ALX.

Alex Den Cenko
Via Padre Semeria 28/C11
16131 Genova, Italy

While this is not the first RTTY activity from Monaco it does promise to be more sustained, we understand that Alex will be there for some time. Mauro, I1ZBS, was there on a DXpedition in 1966 and Dave, 3A2CQ was active from time to time in the early 70's. The latter incidentally is still listed in the call book but has not been heard from in the past few years.

About a week after that surprise we were jolted into reality while casually tuning the band when the printer came up with...ON4CK de HZ1SH... This chap indicated to Bob that he had just come on the mode and this was his second QSO. By that time the avalanche of QRM broke loose and we never did hear him again. No additional information at this time except that he is in Jeddah, Saudi Arabia. In the short while we were printing him he seemed to be better copy on 50 band. Again, this is not a first as HZ1AB played with the Green Keys for a short time many moons ago.

Another DXpedition to Andorra in mid September. This activity by Julian, I1GMF and signing C3 1GMF. The shift was 850 hz and the speed was 50 baud. QSL's to the home QTH should get a response from Julian.

Knobby, W2PLQ, advises that the QSL cards for his operation as VP2MRW are in the making and all contacts will receive one in due time. As he made WAC during that short holiday he is particularly anxious to get all the necessary cards to confirm the fact. Send yours to --

Knobby Walsh
2158 Willow St.
Wantagh, N.Y. 11793

Knobby was most enthusiastic in writing about his stay in Montserrat. We cannot help but imagine that when that old refrain, "For he's a Jolly Good Fellow" was written the composer must have certainly had Sid in mind.

Sid's work is completed in VP2M land and he has by this time returned to St. Kitts to carry on as VP2KH. Toward the end of the year he will go to the U.K. for a visit and we understand that he may be heading for a new assignment in another part of the world soon after the new year. It will no doubt be another "first" or RTTY as Sid is so famous for.

Here is an up-date on ED9J2ED, whom we briefly mentioned last month. We understand that he is now A2CED in Botswana. My, but things happen fast! We hope to keep you posted on Ed's future activities.

With RTTY activity so scarce from Liberia we can tell you that EL2F does show up from time to time on exactly 14100 khz in traffic schedules with K2AXO. You may already know that this is a missionary station so please do not interrupt the traffic with bk's. If you have a little patience I am sure EL2F will give you a contact when the traffic is completed.

The continent of Africa should be a sure thing in the Contests coming up this season. A tremendous increase in activity from Angola with CR6AR, CR6CN CR6FY, CR6NO, and CR6RT all active with excellent narrow shift signals. Also, in early September we did print Mike, TU2DD, again which makes it two active from Ivory Coast.

We are pleased to congratulate the following stations upon obtaining the WAC certificate.

Nr. 230 Sigurd Schow OZ2X
Nr. 231 Prehen Andersen OZ8GA

Both stations made WAC in the SARTG Contest and log extracts were confirmed by OZ2CJ, Contest and Awards Manager for the SARTG.

Here is an important notice from SARTG Headquarters. OX3JW is now in Denmark but will be QRV from Greenland from December 6 to December 15. He will be as active as much as possible but after that date he will QRT and return to Denmakr permanently.

We now understand that John, P29JF was on a visit to P29MC at the time he was QRV several weeks ago. John does not have a station set up on RTTY so this leaves Mac the only station active from Papua. Mac wants you to know that he is available for skeds if you have not worked him as yet. Drop him a note, his QTH appeared in previous issues of this column.

XW8HJ does have RTTY capabilities and while he is mostly on 20 meter CW he will gladly QSY mode and frequency if you ask him. Tony will be in Laos for a couple of years. His QSL manager is Glenn, K2SWZ. We hope to have more information on this station from time to time.

DX - RTTY November, 1964.

Slim pickings this month but the RTTY Sweepstakes Contest did bring forth 5T5TR as the only African and YV5AVW as the only South American active. No Asia, no Oceania. Also active XE1YJ, FG7XT, DL1VR, GM3ENJ, LA6VC, PA0FB, and OZ7T.

With many thanks to W2PLQ, W3DJZ K6WZ, VP2KH, OZ4FF.

73 de John

*****

170 hZ FSK Conversion on the TS900

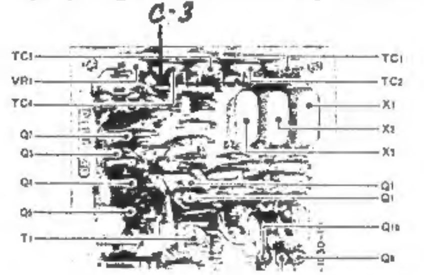
DICKSON PRATT, WB6DMP
1215 Lachman Lane
Pacific Palisades, CA. 90272

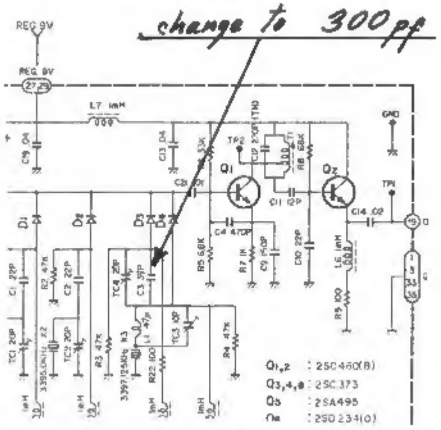
The Kenwood TS-900 transceiver is an excellent piece of equipment which comes factory equipped with Frequency Shift Keying for RTTY. The only problem is that the shift is 850hz which is becoming extremely rare on the Ham bands. To modify the TS-900 to the popular 170hz shift only takes a few minutes and involves the substitution of 1 capacitor.

To perform this modification, one needs to obtain a 300pf silver mica capacitor and take the following steps:

1) Remove the top cover of the TS-900 (1 screw).
2) Locate and remove the cover plate marked "Carrier Unit" (5 screws). This plate is located at the center-rear of the TS-900 and has the adjustment holes for "Mark" and "Space".
3) Remove the CAR-AVR board (first board on the left) by removing the 2 screws which hold it in place and then gently rocking the board back and forth while pulling it up and out of its socket.
4) Locate the "Space" capacitor "C-3" (39pf) which is mounted behind and parallel to the "Space" trimmer. Using a low wattage soldering iron remove "C-3" and replace with the new 300pf silver mica capacitor.
5) Install the CAR-AVR board and its cover plate.

This completes the modification, but before replacing the top cover of the TS-900 check the operation of the FSK to see if it is shifting at 170hz. It may be necessary to adjust the "Space" trimmer slightly to get the shift exactly on 170hz.





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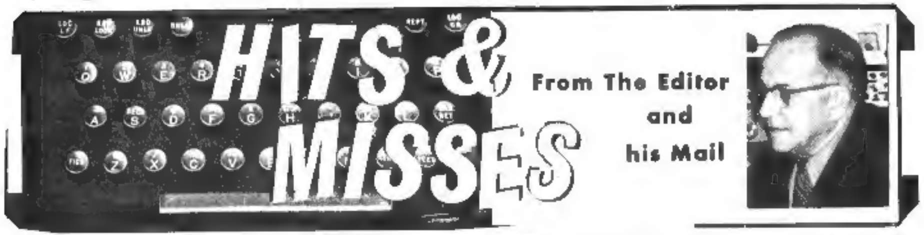

HITS & MISSES

From The Editor and his Mail

In the almost 8 years we have been publishing the Journal one of the nicest things has been the friends we have made both on the air and by mail. One of our biggest regrets is not answering many of the nice letters we have received. Frankly, we always have good intentions but with about 250 letters a month including renewals, new subscriptions and change of address our habit of procrastination seems to take over when they are taken care of. Sincerely we do enjoy hearing from you and your suggestions and criticisms even if we do such a poor job of answering them. Forgive us, as they say since we retired we seem to get further and further behind in our work.

***

Although the RTTY ART CONTEST will soon be over - October 30, we hope that many of you participated. It takes a lot of work and planning to run a contest and it is being done to add interest to RTTY operators. Get busy now and send something in. Even if you don't win you have had some fun and helped make it worthwhile to those running the contest.

***

With the risk of being repetitious, if you are planning on the Dayton Hamfest this year - April 25-27 get your reservation for hotel or motel rooms in early. This is without doubt the largest and by far the best hamvention in the country. Now running three days, to give a better chance of seeing everything, the last couple of years have been a complete sell out for motel accommodations and last year many visitors were driving 20 to 30 miles for accommodations.

The RTTY JOURNAL suite will be at the same place - SOUTH ROOM, of the Imperial House North Motel. I-75 and Needmore Rd. Dayton, Ohio, 45414.

There are many other motels near by, Holiday Inn, Howard Johnson and several down town hotels. So take your choice but do it now. When a ham flies in twice from Hawaii for the affair you know it has to be good.

We have had a lot of nice comments on the UART with requests for more articles. Anybody have an article?

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BACK ISSUES --

New subscriptions and classified ads are cash in advance as we have no method for billing. New subscriptions do not ask us to start any further back than this. Back issues - if available - may be ordered at 30¢ each at time of subscription. The JOURNAL is mailed about the 20th of the month preceding the dated month. May and June are a combined issue and July-August is a combined issue.

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End of Illusions for A Contest Manager

As an old timer who has been both a contestant and a manager of DX, RTTY and SSTV Contests, I feel the time has come to comment on some of the nefarious activities conducted by all too many contestants.

We are no doubt in a time of considerable change in moral value, attitudes, etc. but my comments will not be addressed to those but will deal directly with actual events which are not normally known to the average, sincere, honest OMs.

I have observed as a contest manager, that as the number of contests and contestants have increased there is also a marked increase in cheating. It is hoped that a way could be devised to keep the cheating to an absolute minimum.

In general contests are conducted by both written and unwritten rules. Publication of all rules is usually restricted due to limited space available in radio magazines. It is this loop hole that the fraudulent OMs uses to cheat. I will cite for you some typical examples.

The Oms submitted to this manager a contest logs that contain many contacts obviously made via telephone. When asked about this blatant contest violation the contestant refused to confirm or deny that the contacts in question were naturally made.

In a case like this, what option for action are available to the contest manager? The answer: NOTHING.

Disqualifications of the contestant is possible only because he violated unwritten moral rules. If the manager should disqualify the OM he will probably be denounced by the effect contestant for defamation of character and be asked for indemnity because of supposed moral damage to his person.

Another approach would be for the contest manager to strike out all for the "telephone contacts" but to the OM who has cheated in this manner this penalty will be an insignificant loss.

Another example of contest cheating prevalent today is on transmitter power. In many contacts it is required that a declaration of the transmitter power be made for a special multiplier or to observe the regulation for a particular country. For my experience it is impossible to receive a realistic declaration, as a result, I have not required. Contestants in recent contests I have managed to "I certify on my honour. . .etc." The stations with 3 KW declares he is running only 300 W, because this may be the limitation fixed by some countries. Others with 200 W declares 30 W so as to have his entry judged with those stations using 100 Watts or less.

These are just two of many examples of cheating that the contest manager has to put up with. Fortunately the majority of the contestants are honest people, but the rules in use today do not protect them from the cheats, nor are these cheats thrown out of the contestants.

I very much recognize that competition is a part of the nature of man, and it is also the nature of some man to have a tendency to cheat in order to win. To me this is a sick person who gains the satisfaction of superiority by winning through cheating.

I would suggest consideration of following personals.

1. Prepare and publish a set of basic rules covering those written and not written, in such format to be valid for any contest. World insurance rules are an example of this type.

2. Establish a Committee (for example in the ARRL) to act as a "high court" to give judgments to those OMs who have been expelled from contest.

These are only some of many possible suggestions and I hope others will be proposed and that I may have brought to the attention of many unknowledgeable readers the dilemma that cheating is presenting to the contest manager.

I also hope that it is taken in the proper text and as the movies say: "Any person and any part of this article is imaginary and does not have reference to any person living or dead."

73s de Franco i1LCF

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The above letter is published verbatum, without comment.
(Editor)

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